

ABSTRACT

An apparatus and method for storing optical information packets. The apparatus includes an optical circulator set up to receive and circulate an optical packet having an initial frequency and length. The circulator may include a frequency shifter which shifts the frequency of the circulating packet. The circulator may then receive a following packet at the initial frequency. The frequency shifter may then frequency-shift the circulating packets and receive a new packet. This process may be continued thereby creating a frequency-stacked signal composed of information packets at different wavelengths. On the receiving end, frequency shifters may receive the frequency-stacked signal and shift the signal until a desired packet has a desired frequency. The desired packet may then be filtered and detected for transmission. In another embodiment, a tunable filter may be used to filter out a desired packet at some arbitrary frequency.